

**UNITED STATES PATENT & TRADEMARK OFFICE**

Examiner: KOSSON, Rosanne      Art Unit: 1652

Re: Application of:      CHOE, Mu-Hyeon, *et al.*

Serial No.:      10/562,627

Filed:      December 22, 2005

For:      **THE DIMER OF CHIMERIC  
RECOMBINANT BINDING DOMAIN-  
FUNCTIONAL GROUP FUSION  
FORMED VIA DISULFIDE-BOND-  
BRIDGE AND THE PROCESSES FOR  
PRODUCING THE SAME**

Confirmation No.:      6450

**RESPONSE**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

August 23, 2007

Sir:

Responsive to the Office Action dated May 23, 2007, the following remarks are made:

**A. Restriction Requirement**

In response to the restriction requirement, Applicants elect to further prosecute in this patent application Group 1, claims 21, 27, 30 and 39, drawn to a fusion protein monomer comprising a functional domain that is an enzyme, an extension peptide containing a C residue, and a binding domain. Applicants also elect a monomer of Group 1 for the second half of a dimer. This response is made with traverse and it is urged that the claims contained in Groups 1-12 be examined together. Reconsideration is respectfully requested.

The Examiner has taken the position that the present invention lacks unity of the invention, because there is no common technical feature distinguishable over Choe et al. (Cancer

Res. 54: 3460-3467, 1994). The Examiner has indicated that Choe et al. discloses a fusion protein containing a first domain that is a protein and a binding domain, either the light chain or the Fd fragment of monoclonal antibody B3, covalently linked to an extension peptide that is fused to a functional domain PE38.

The present invention provides a fusion protein containing a binding domain, an extension peptide having at least one uncoupled Cysteine and a functional domain, which is capable of forming a dimer through a disulfide bridge between two monomers.

Unlike the present invention, Choe et al. does not teach nor suggest fusion proteins containing an extension peptide which includes uncoupled Cysteine(s). C3 connector of Choe et al. corresponds to the extension peptide of the present invention. The C3 connector does not, however, contain uncoupled Cysteine(s). The amino acid sequence of the C3 connector is ASGGPE, and there is no Cysteine ("C") in the C3 connector. See Fig. 2(b) of Choe et al. The fusion protein of Choe et al. can not be dimerized by a disulfide bridge.

Furthermore, the Examiner has the discretion to prosecute all of the pending claims in a single patent application. In fact, "[I]f the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions." (Emphasis added; Manual of Patent Examining Procedure, § 803, second paragraph). Accordingly, Applicants urge that there would not be an undue burden upon the Examiner to search and consider Groups 1-12 at the same time.

Additionally, Applicants believe that claims 24-26 should be examined with the elected group 1. Dependent claims 24-26 refer back to claim 21 of the elected group.

Thus, for all of the above reasons, the Examiner is respectfully requested to reconsider and withdraw the present Restriction Requirement.

#### B. Election of Species

In response to the requirement of election of species, Applicants elect to further prosecute in this case the species "(a)" from the peptides listed in (iii) of claim 21 in the event that no generic claim is finally held allowable. It is believed that claims 21, 27, 30, 31-36, 39 and 40 currently read on the elected species. In the event that claims 24-26 directed to the non-elected groups are examined together, it is believed that claims 24-26 are also readable on the elected species. Concerning claim 26, Applicants elect "2" as "n", "S" at position 2 and "K" at position

4.

This response to the requirement of the election of species is also made with traverse. Reconsideration is therefore respectfully requested. It is believed that the differences of species is not such as to require separate examinations. Accordingly, it is urged that, in the interest of efficiency in prosecution, all the species be examined together.

#### FEES

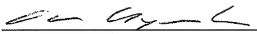
This response is being filed with a petition for a two-month extension of time and the required fee via credit card authorization. No further fees are believed to be required. If, on the other hand, it is determined that further fees are necessary or any overpayment has been made, the Commissioner is hereby authorized to debit or credit such sum to Deposit Account No. 02-2275.

Pursuant to 37 CFR 1.136(a)(3), please treat this and any concurrent or future reply in this application that requires a petition for an extension of time for its timely submission as incorporating a petition for extension of time for the appropriate length of time. The fee associated therewith is to be charged to the above-mentioned deposit account.

An early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

LUCAS & MERCANTI, LLP

By:   
Hyun Soon Cho  
Recognition No. L0306

LUCAS & MERCANTI, LLP  
475 Park Avenue South  
New York, New York 10016  
Tel: 212-661-8000

CERTIFICATE OF ELECTRONIC TRANSMISSION  
I hereby certify that this document is being electronically  
transmitted to the Commissioner for Patents via  
EFS-Web on August 23, 2007.

LUCAS & MERCANTI, LLP

BY:   
Hyun Soon Cho